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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/751,477

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Dong Jae You

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EXAMINER

CHEN, WEN YING PATTY

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/751,477	<b>Applicant(s)</b> YOU, DONG JAE	
	<b>Examiner</b> WEN-YING PATTY CHEN	<b>Art Unit</b> 2871	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7,11-13,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,11-13,17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's amendment filed on Apr. 29, 2010 has been entered. Claims 8, 9, 14, 15, 19 and 20 have been cancelled. Therefore, claims 1, 2, 4-7, 11-13, 17 and 18 remain pending in the current application.

### ***Claim Objections***

Claims 1, 11 and 18 are objected to because of the following informalities: Claims 1, 11 and 18 each contains the limitation of "wherein the end portion of the bottom cover is positioned to leave a predetermined interval (A) from end portions of the light guide plate". Such limitation is unclear as to how an end portion of the bottom cover is to leave a predetermined interval from more than one end portions of the light guide plate. For purpose of examination, the limitation will be treated as to recite, "wherein the end portion of the bottom cover is positioned to leave a predetermined interval (A) from an end portion of the light guide plate". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1, 4, 6, 11, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Sakamoto et al. (US 6445430).**

With respect to claim 1 (Amended): Lee et al. discloses in Figure 9 a liquid crystal display device, comprising:

a liquid crystal display panel (element 112);

a backlight unit having a light guide plate (element 120), a fluorescent lamp (element 118), a reflection plate (element 122) along a rear side of the light guide plate, a reflection sheet (element 124) substantially enclosing an outer side of the fluorescent lamp except for a light exit portion (as shown) to reflect light emitted from the fluorescent lamp, and a bottom cover (element 138) having an end portion (the portion of the bottom cover forming a C-shape) with a shape that substantially follows a contour of the reflection sheet (as shown; wherein the bottom cover having substantially the same shape as the reflection sheet) to substantially surround and encase the reflection sheet and to support and affix the reflection sheet,

wherein the reflection sheet (element 124) includes opposite first end portion and second end portion (as shown) and

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wherein the second end portion (the portion corresponding to element 138a) of the reflection sheet overlaps the reflection plate and the light guide plate;

optical sheets (element 116) positioned along an upper surface of the light guide plate and overlapping the first end portion of the reflection sheet by an overlap amount (as shown),

wherein the end portion of the bottom cover is positioned to leave a predetermined interval from an end portion of the light guide plate (element 120) and the optical sheets (element 116), and the first end portion of the reflection sheet overlaps the light guide plate by the overlap amount (as shown) and

a chassis (element 1330 supporting and affixing the liquid crystal display panel and the backlight unit.

Lee et al. does not disclose that the end portion of the bottom cover substantially contact all the outer side of the reflection sheet except for a portion of the predetermined interval and an overlapping portion with the overlap amount, because of the presence of element 132, which helps fixing the liquid crystal display.

However, Sakamoto teaches in Figures 4 and 6 of forming a liquid crystal display fixing element (element 9) integral with an end portion of a bottom cover (element 6), hence, the end portion of the bottom cover would contact all the outer side of the reflection sheet except for a portion of the predetermined interval and an overlapping portion with the overlap amount in the device as disclosed by Lee et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. wherein the liquid crystal display fixing element is formed integral with the end portion of the bottom

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cover as taught by Sakamoto, since by forming the two elements integral allows the display device to achieve the same benefit while being produced with fewer parts and thus helps to reduce assembly time and cost.

As to claim 4: Lee et al. and Sakamoto disclose all of the limitations set forth in claim 1, but do not specifically disclose that the predetermined interval is within a range of about 0.1mm to about 50mm.

However, it would have been obvious to one of ordinary skill in the art to set the predetermined interval within a range of about 0.1mm to about 50mm, since “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. and Sakamoto wherein the predetermined interval is set within a range of 0.1mm to about 50mm.

As to claim 6: Lee et al. further discloses in Column 4 lines 48-51 that the reflection sheet is formed of polyethylene terephthalate (PET).

With respect to claim 11 (Amended): Lee et al. discloses in Figure 9 a backlight unit, comprising:

a panel-type guide plate (element 120) having a light projection plane and a light incident plane;

a reflection plate (element 122) along a rear side of the light guide plate;

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a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 118) and a reflection sheet (element 124) at an outer side of fluorescent lamp,

wherein the reflection sheet includes opposed first end portion and second end portion (as shown) and

wherein the second end portion of the reflection sheet (portion corresponding to element 138a) overlaps the reflection plate and the light guide plate;

optical sheets (element 116) over the light projection plane of the light guide plate and overlapping the first end portion of the reflection sheet by an overlap amount (as shown); and

a bottom cover (element 138) extending from a rear side of the reflection plate to an outer side of the reflection sheet such that an end portion of the bottom cover extends to the outer side of the reflection sheet substantially following a contour of the reflection sheet (as shown; wherein the bottom cover having substantially the same shape as the reflection sheet) to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, and

wherein the end portion of the bottom cover (element 138) is positioned to leave a predetermined interval from an end portion of the light guide plate and the optical sheets, and the first end portion of the reflection sheet overlap the light guide plate by the overlap amount (as shown).

Lee et al. does not disclose that the end portion of the bottom cover substantially contact all the outer side of the reflection sheet except for a portion of the predetermined interval and an

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overlapping portion with the overlap amount, because of the presence of element 132, which helps fixing the liquid crystal display.

However, Sakamoto teaches in Figures 4 and 6 of forming a liquid crystal display fixing element (element 9) integral with an end portion of a bottom cover (element 6), hence, the end portion of the bottom cover would contact all the outer side of the reflection sheet except for a portion of the predetermined interval and an overlapping portion with the overlap amount in the device as disclosed by Lee et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. wherein the liquid crystal display fixing element is formed integral with the end portion of the bottom cover as taught by Sakamoto, since by forming the two elements integral allows the display device to achieve the same benefit while being produced with fewer parts and thus helps to reduce assembly time and cost.

As to claim 12: Lee et al. further discloses in Column 4 lines 48-51 that the reflection sheet is formed of polyethylene terephthalate (PET).

With respect to claim 18 (Amended): Lee et al. discloses in Figure 9 a backlight unit for a liquid crystal display device, comprising:

- a light guide plate (element 120);
- a reflection plate (element 122) along a rear side of the light guide plate;
- a fluorescent lamp (element 118) along an outer periphery of the light guide plate;



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a reflection sheet (element 124) substantially enclosing the fluorescent lamp along the outer periphery of the light guide plate to reflect light from the fluorescent lamp to the light guide plate,

wherein the reflection sheet includes opposed first end portion and second end portion (as shown) and

wherein the second end portion of the reflection sheet (portion corresponding to element 138a) overlaps the reflection plate and the light guide plate (as shown);

optical sheets (element 116) positioned along an upper surface of the light guide plate, and overlapping the first end portion of the reflection sheet by an overlap amount (as shown); and

a bottom cover (element 138) along a rear side of the reflection plate having an end portion with a shape that substantially follows a contour of the reflection sheet (as shown) to substantially surround and encase the reflection sheet and to support and affix the reflection sheet,

wherein the end portion of the bottom cover (element 138) is positioned to leave a predetermined interval from an end portion of the light guide plate and the optical sheets, and the first end portion of the reflection sheet overlaps the light guide plate by the overlap amount (as shown).

Lee et al. does not disclose that the end portion of the bottom cover substantially contact all the outer side of the reflection sheet except for a portion of the predetermined interval and an overlapping portion with the overlap amount, because of the presence of element 132, which helps fixing the liquid crystal display.

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However, Sakamoto teaches in Figures 4 and 6 of forming a liquid crystal display fixing element (element 9) integral with an end portion of a bottom cover (element 6), hence, the end portion of the bottom cover would contact all the outer side of the reflection sheet except for a portion of the predetermined interval and an overlapping portion with the overlap amount in the device as disclosed by Lee et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. wherein the liquid crystal display fixing element is formed integral with the end portion of the bottom cover as taught by Sakamoto, since by forming the two elements integral allows the display device to achieve the same benefit while being produced with fewer parts and thus helps to reduce assembly time and cost.

**Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) and Sakamoto et al. (US 6445430) in view of Lee (US 2003/0223020).**

Lee et al. and Sakamoto disclose all of the limitations set forth in claim 1, and Lee et al. further discloses in Figure 9 that the backlight unit further comprises:

a panel-type light guide plate (element 120) having a light projection plane and a light incident plane; and

a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 118) and the reflection sheet (element 124) at an outer side of the fluorescent lamp.

Lee et al. does not disclose a rectangular mold frame.

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However, Lee discloses in Figures 31 and 32 of a backlight unit comprising a mold frame (element 500) for receiving the reflection plate, the light guide plate, the optical sheet, and the lamp assembly therein, wherein a bottom cover extends from a bottom of the mold frame.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. and Sakamoto wherein the backlight unit of the display device comprises a mold frame as taught by Lee, since Lee teaches that by providing the mold frame allows the backlight assembly to be securely attached to the chassis.

**Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) and Sakamoto et al. (US 6445430) in view of Shiotani et al (JP 2001-338512).**

With respect to claim 5: Lee et al. and Sakamoto disclose all of the limitations set forth in the previous claims, but do not specifically disclose that the first overlap amount is within a range of about 0.2mm to about 30mm.

However, Shiotani discloses in Figure 3 a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; Paragraph 0040), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Lee et al. and Sakamoto wherein the first overlapping amount is as taught by Shiotani, since Shiotani teaches

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that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Paragraph 0040).

As to claim 17: Lee et al. and Sakamoto disclose all of the limitations set forth in claim 11, but do not specifically disclose that the predetermined interval is within a range of about 0.1mm to about 50mm and that the first overlap amount is within a range of about 0.2mm to about 30mm.

However, it would have been obvious to one of ordinary skill in the art to set the predetermined interval within a range of about 0.1mm to about 50mm, since “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955). Further, Shiotani discloses in Figure 3 a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; Paragraph 0040), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Lee et al. and Sakamoto wherein the predetermined interval is set within a range of 0.1mm to about 50mm and wherein the first overlapping amount is as taught by Shiotani, since Shiotani teaches that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Paragraph 0040).

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**Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) and Sakamoto et al. (US 6445430) in view of Nakano (US 2003/0053008).**

Lee et al. and Sakamoto disclose all of the limitations of the liquid crystal display device set forth in the previous claims, but do not further disclose that the reflection sheet is formed of one of a synthetic resin including one of a polymer having a high reflexivity and Ti.

However, Nakano discloses in Paragraph 0034 and 36 and Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin selected from the group consisting of ABS, PET, PVC and a non-metallic substance, which includes one of a polymer having a high reflexivity and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the liquid crystal display device disclosed by Lee et al. and Sakamoto with the reflection sheet composition disclosed by Nakano, since the use of a polymer having a high reflexivity and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

### ***Response to Arguments***

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEN-YING PATTY CHEN whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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